

IN THE CLAIMS:

Without prejudice, please cancel claim 1 - 27 and add new claims 28 - 54, as follows:

1. - 27. (Canceled)

28. (New) A bus station performing a primary function and adapted to be coupled to a bus system, comprising:
at least one bus interface communicating with the bus system; and
a bus monitor arrangement coupled to the bus interface,
wherein the bus station performs a secondary function different from the primary function using the bus monitor arrangement, the secondary function including at least one of: monitoring a communication between the bus station and the bus system via the bus interface and monitoring an internal communication within the bus station.

29. (New) The bus station according to claim 28, wherein the bus monitor arrangement performs at least one of providing monitor data to the bus system and receiving monitor data from the bus system.

30. (New) The bus station according to claim 28, wherein the bus monitor arrangement accesses and detects data telegrams of the bus system, the bus monitor arrangement providing the detected data telegrams in a form of monitor data to the bus system.

31. (New) The bus station according to claim 28, wherein the bus monitor arrangement accesses and detects data of the bus station, the bus monitor arrangement providing the detected data in a form of monitor data to the bus system.

32. (New) The bus station according to claim 28, wherein the bus monitor arrangement includes a program unit which accesses data telegrams of the bus system and data of the bus station, the program unit further processing the data telegrams and the data.
33. (New) The bus station according to claim 28, wherein the bus monitor arrangement includes at least one filter evaluating detected monitor data as a function of predetermined filtering criteria.
34. (New) The bus station according to claim 33, wherein the filter is one of a command filter, an address filter and a combined command-address filter.
35. (New) The bus station according to claim 28, wherein the bus monitor arrangement includes a telegram memory storing detected monitor data.
36. (New) The bus station according to claim 28, wherein monitor data detected by the bus monitor arrangement is provided to the bus system via the bus interface for further processing.
37. (New) The bus station according to claim 28, further comprising:
a further interface reading out monitor data detected by the bus monitor arrangement for further processing by an external evaluating system.
38. (New) The bus station according to claim 28, wherein the bus monitor arrangement includes one of a screen and a display visualizing monitor data.
39. (New) The bus station according to claim 35, wherein the monitor data is evaluated on-line.
40. (New) The bus station according to claim 35, wherein the monitor data is evaluated off-line.

41. (New) The bus station according to claim 28, wherein the bus monitor arrangement automatically provides obtained monitor data to one of a further bus station and an evaluating system.
42. (New) The bus station according to claim 28, wherein the primary function of the bus station is one of a sensor function and an actuator function.
43. (New) The bus station according to claim 17, wherein the sensor function is a filling level measurement device.
44. (New) The bus station according to claim 28, wherein the bus station is a control unit reading-in process data from sensorics and outputting the process data to actorics.
45. (New) The bus station according to claim 40, wherein the control unit is a memory programmable controller.
46. (New) The bus station according to claim 28, wherein the bus station is a gateway linking two different bus systems with each other.
47. (New) The bus station according to claim 28, wherein the bus station is a bridge linking two similar bus systems with each other.
48. (New) A network, comprising:
at least one bus system; and
at least one bus station performing a primary function and adapted to be coupled to the bus system,
wherein the bus station includes at least one bus interface communicating with the bus system and a bus monitor arrangement coupled to the bus interface,

wherein the bus station performs a secondary function different from the primary function using the bus monitor arrangement which (a) monitors a communication between the bus station and the bus system via the bus interface and (b) monitors the network.

49. (New) The bus station according to claim 48, wherein the primary function of the bus station is one of a sensor function and an actuator function.

50. (New) A method for monitoring processes of a bus system, comprising the steps of:
coupling a bus station to the bus system, wherein the bus station performs a primary function and includes at least one bus interface communicating with the bus system and a bus monitor arrangement coupled to the bus interface, and wherein the bus station performs a secondary function different from the primary function of monitoring using the bus monitor arrangement; and

monitoring a communication between the bus station and the bus system via the bus interface using the bus monitor arrangement.

51. (New) The method according to claim 50, further comprising the step of:
monitoring telegram traffic carried on the bus system using the bus monitor arrangement.

52. (New) The method according to claim 51, further comprising the step of:
detecting and further processing the telegram traffic using a program unit of the bus station.

53. (New) A method for monitoring processes of a bus system, comprising the steps of:
coupling a bus station to the bus system, the bus station performing a primary function and including at least one bus interface communicating with the bus system and a bus monitor arrangement coupled to the bus interface, the bus station performing a secondary function of monitoring using the bus monitor arrangement; and

monitoring an internal communication of the bus station using the bus monitor arrangement.

54. (New) The bus station according to claim 53, wherein the primary function of the bus station is a sensor function.